

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	235	345/209.ccls.	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/07/21 12:07
L2	14400	level near3 shifter	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/21 12:08
L3	33629	(positive negative) near3 polarity	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/21 12:07
L4	509	L2 L3	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/07/21 12:07
L5	34	1 2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/21 12:08
L6	47184	(medium or intermediate or middle) near3 voltage	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/21 12:08
L7	6	5 6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/21 12:09

## EAST Search History

L8	199	2 same 6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/21 12:09
L9	0	1 8	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/21 12:09
L10	1995	327/333	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/21 12:09
L11	1203	327/333.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/21 12:10
L12	29	8 11	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/21 12:10
L13	4	8 11 display	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/21 12:12
L14	3748	345/98-100.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/21 12:12

## EAST Search History

L15	3144	345/204.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/21 12:12
L16	48	4 15	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/21 12:13
L17	87	4 6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/21 12:13
L18	15	15 17	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/21 12:17
L19	7866	1 or 11 or 14 or 15	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/21 12:19
L20	1	(shift register level shifter analog circuit positive negative (middle or mid or medium or intermediate) voltage).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/21 12:20
L21	93	(level shifter (middle or mid or medium or intermediate) voltage).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/21 12:20

## EAST Search History

L22	9	19 21	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/21 12:21
S1	1519	(345/100).CCLS.	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	OFF	2007/01/26 10:44
S2	23	source driver (middle with voltage) power supply S1	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/26 10:46
S3	20	source driver (middle with voltage) power supply S1 polarity	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/26 10:46
S4	21	(source or signal) driver (middle with voltage) power supply S1 polarity	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/26 10:47
S5	13	(source or signal) driver (middle with voltage) power supply S1 polarity buffer	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/26 11:25
S6	1477	level shifter analog circuit supply voltage middle	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/26 11:25
S7	11	S1 S6	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/26 11:28
S8	7	S1 (source with driv\$3) power consum\$4 voltage level middle ground	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/26 11:31

## EAST Search History

S9	467	(source with driv\$3) power consum\$4 voltage level middle ground LCD	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/26 11:31
S10	162	((source or data) with driv\$3) power consum\$4 (mid\$3 near voltage) level middle ground LCD	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/26 11:32
S11	174	((source or data) with driv\$3) power consum\$5 (mid\$3 near voltage) level middle ground LCD	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/26 11:33
S12	7	((source or data) with driv\$3) power consum\$5 (mid\$3 near voltage) level middle ground LCD polarity inversion	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/26 11:50
S13	12	((source or data) with driv\$3) power consum\$5 (mid\$3 near voltage) level middle ground LCD polarity d\$1a	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/26 15:20
S14	3050	(345/98-100).CCLS.	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	OFF	2007/01/29 11:24
S15	3237	level shifter voltage middle	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 10:17
S16	51	S14 S15	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 10:17
S17	25973	invers\$4 consum\$4 power voltage	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 10:26
S18	270	S14 S17	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 10:28

## EAST Search History

S19	268	S14 S17 (source or data)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 10:29
S20	11	S14 S17 (source or data) S15	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 10:32
S21	140922	(LCD or (liquid near crystal near display)) (source or data) driv\$3	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 10:35
S22	24329	level shifter (A\$1D or analog) circuit	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 10:37
S23	16612	level shifter (D\$1A or analog) circuit	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 10:38
S24	3084	S21 S23	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 10:38
S25	2424	supply voltage S24	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 10:41
S26	690	middle S24	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 10:41
S27	12302	((source or data) near driv\$3) LCD	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 10:40
S28	104	(level near shift\$3) ((D\$1A or analog) near circuit) (supply near voltage) S27	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 11:01

## EAST Search History

S29	37	reduce power consumption LCD VDD GND level shifter	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 11:17
S30	12	reduce power consumption LCD VDD GND level shifter invers\$4 polarity	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 11:02
S31	1265	lcd polarity inversion reduce power	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 11:18
S32	18	lcd same polarity same inversion same reduce same power	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 11:18
S33	122	S14 polarity inversion reduce power voltage level shifter	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 13:22
S34	3	S14 ((reduce or conserve) same power same analog same circuit same level same shifter)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 13:23
S35	772	S14 ((reduce or conserve) same power)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 13:23
S36	7	S14 ((reduce or conserve) same power same polarity same amplitude)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 13:28
S37	581	lcd reduce power source driver variable polarity voltage amplitude	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 13:29
S38	306	lcd reduce power source driver variable polarity voltage amplitude (liquid near crystal near display)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 13:29

## EAST Search History

S39	28	S38 S14	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 13:48
S40	2	LCD DAC reference voltage genrat\$4 reduce power	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 13:49
S41	2	(liquid near crystal near display) DAC reference voltage genrat\$4 reduce power	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 13:49
S42	2013	source drive\$3 reference voltage DAC LCD	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 13:49
S43	1406	source drive\$3 reference voltage DAC LCD reduce power	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 13:50
S44	484	source drive\$3 reference voltage DAC LCD reduce power polarity	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 13:52
S45	668	(driv\$3 near voltage) DAC LCD source driv\$3	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 13:52
S46	262	(driv\$3 near voltage) DAC LCD source driv\$3 level shifter	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 13:53
S47	46	(driv\$3 near voltage) same DAC LCD source driv\$3 level shifter	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 14:01
S48	10	(driv\$3 near voltage) same DAC same (level near shifter)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 14:05



## EAST Search History

S49	1	(middle near voltage) same DAC same (level near shifter)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 14:05
S50	8	(vdd) same DAC same (level near shifter)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 14:10
S51	4	(operat\$3 near voltage) same DAC same (level near shifter)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 14:13
S52	0	(variable same vdd) same DAC same (level near shifter)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 14:13
S53	0	(variable and vdd) same DAC same (level near shifter)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 14:13
S54	4	(variable and vdd) same DAC (level near shifter)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/29 14:14
S56	3054	345/98-100.ccls.	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/31 11:15
S57	227345	source near5 driv\$3	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 12:01
S58	93442	level with shift\$3	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 11:54
S59	412852	supply near5 volt\$3	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 11:55

## EAST Search History

S60	0	S56 same S57 same S58 same S59	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 11:55
S61	0	S56 same S57	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 11:55
S62	227	S57 same S58 same S59	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 12:02
S63	11	S62 S56	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 11:56
S64	99	S57 same S58 same polarity	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 12:02
S65	19	S56 S64	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 12:00
S66	402795	(source or signla or data) near5 driv\$3	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 12:02
S67	170	S66 same S58 same polarity	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 12:02
S68	40	S56 S67	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 12:10
S69	399	S66 same S58 same S59	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 12:02

## EAST Search History

S70	55	S56 S69	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 12:02
S71	2	"20030155958"	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 12:55
S72	25	finger same aperture same mouse same button	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 12:55
S73	14	(US-20040032386-\$ or US-20020063666-\$ or US-20030155958-\$).did. or (US-6549184-\$ or US-5859632-\$ or US-5010326-\$ or US-6262704-\$ or US-6496174-\$ or US-6256015-\$ or US-5453757-\$ or US-6486864-\$ or US-6462723-\$ or US-5731796-\$). did. or (GB-2247938-\$).did.	US-PGPUB; USPAT; EPO	AND	ON	2007/01/31 10:51
S74	3	S73 gamma	US-PGPUB; USPAT; EPO	AND	ON	2007/01/30 13:07
S75	59993	level near5 shift\$3	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 16:50
S76	300624	(intermediate or middle or medium) near7 (volt\$3 or pulse or signal)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/31 10:05
S77	89471	ground same (supply near5 volt\$4)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 16:51
S78	88	S75 same S76 same S77	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 13:51

## EAST Search History

S79	60072	(level near5 shift\$3) or (level near5 shift\$5 circuit)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 16:51
S80	59996	(level near5 shift\$3) or (level near5 shift\$5 near5 circuit)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 16:51
S81	120488	ground same ((drive or supply or operat\$3) near5 volt\$4)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 16:54
S82	107	S80 same S81 same S76	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 17:08
S83	338747	low near5 volt\$4	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 17:11
S84	4894	S83 same S80	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 17:11
S85	560673	(reduc\$3 or sav\$3 or consum\$5) near5 power	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/31 16:54
S86	2348	S84 S85	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 17:13
S87	408	S84 same S85	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 17:13
S88	10	S84 same S85 same S76	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/31 10:04

## EAST Search History

S89	19	S84 same S85 same S77	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/30 17:22
S90	2689	345/204.ccls.	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/31 10:05
S91	59993	level near5 shift\$3	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/31 10:05
S92	300624	(intermediate or middle or medium) near7 (volt\$3 or pulse or signal)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/31 14:16
S93	1242	S91 same S92	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/31 10:06
S94	16	S90 S93	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/31 10:06
S95	14	(US-20040032386-\$ or US-20020063666-\$ or US-20030155958-\$).did. or (US-6549184-\$ or US-5859632-\$ or US-5010326-\$ or US-6262704-\$ or US-6496174-\$ or US-6256015-\$ or US-5453757-\$ or US-6486864-\$ or US-6462723-\$ or US-5731796-\$). did. or (GB-2247938-\$).did.	US-PGPUB; USPAT; EPO	AND	ON	2007/01/31 10:51
S96	4	buffer S95	US-PGPUB; USPAT; EPO	AND	ON	2007/01/31 11:15
S97	3054	345/98-100.ccls.	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/31 11:15

## EAST Search History

S98	5398	S90 or S97	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/31 11:16
S99	11	buffer same (unit near5 gain) same (negative near5 (op or operati\$4) near5 (amp or amplifier))	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/31 11:19
S10 0	1310185	(intermediate or middle or medium or second or plural\$4 or multiple) near7 (volt\$3 or pulse or signal)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/31 14:17
S10 1	10446	S100 same S91	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/31 14:18
S10 2	442	S98 S101	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/31 14:18
S10 3	5861	((mutple or second) near3 voltage) same ((level or voltage) near3 shift\$3)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/31 16:52
S10 4	560673	(reduc\$3 or sav\$3 or consum\$5) near5 power	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/31 16:54
S10 5	1942	S103 S104	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/31 16:55
S10 6	182	S103 same S104	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/31 17:26
S10 7	595	low with power with level with shifter	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/31 17:27

## EAST Search History

S10 8	341	(low near3 power) with (level near3 shifter)	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/01/31 17:27
S10 9	1663	345/100.ccls.	US-PGPUB; USPAT; USOCR; EPO; DERWENT	AND	ON	2007/07/13 14:24
S11 0	14362	level near3 shifter	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/13 14:28
S11 1	346	S109 S110	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/13 14:27
S11 2	33564	(positive negative) near3 polarity	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/13 14:27
S11 3	75	S111 S112	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/13 14:28
S11 4	54	(level near3 shifter) same ((positive negative) near3 polarity)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/13 14:29
S11 5	0	("2005/0206629").URPN.	USPAT	AND	ON	2007/07/13 14:52

## EAST Search History

S11 6	41873	(medium or intermediate) near3 voltage	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/21 12:08
S11 7	970	S110 S116	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/13 14:53
S11 8	179	S110 same S116	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/13 14:54
S11 9	5	S112 S118	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2007/07/13 14:54